A Synopsis

STUDIES ON DELAPIDATED FLORA OF NANDED DISTRICT WITH SPECIAL REFERENCE TO MUKHED TALUKA

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SHORT RESUME

INTRODUCTION:

India is rich in plant diversity and one of the mega biodiversity centres of the world. It is clear from the literature that the Indian plant diversity is composed of about 45,000 plant species. It is 7% of the global flora. In Indian plant diversity about 4900 flowering plant species are endemic. It is about 3% of the Indian flora. It is also evident from the literature that in India many plant of different group are very common dominant and wide spread in different habitats. The old and ruined walls in villages, towns and cities are considered as a secondary habitat for many plants. The old and ruined walls in such a localities found to be with favourable growth factors like temperature, humidity and nutrients. The physical characteristics of wall material at many places support the growth of certain plants. It is observed fact that the fortification wall and pavements sometimes help in recovering the rare and endangered plant species and also help in understanding ecological problems and parameters. The natural and living wall not only provide valuable information about the changing land pattern but also makes air clean, maintain carbon footprints and balances the ecology of the township. Therefore the wall flora is also referred as cultural landscapes. It is significant in understanding the ancient objects and ecological features of any urban ecosystem. There are about 250,000 species of plants worldwide, of which about 8,000 species behave as unwanted plants so called weeds. Many of them occupy almost all old walls in rural and urban areas. They spread like wild fire and grow abundantly in walls and sometimes become harmful. In Maharashtra, particularly in Marathwada region many plant species are very common and dominant. About 1,645 plant species including the plants growing on walls have been recorded from this region (Naik, 1998). But population explosion, unplanned development and lack of knowledge about the wall flora and their utilization, have caused a serious threat to the survival of the plant diversity.

Plant resources have made substantial contribution to human welfare. The progress of human beings has been associated with the use of plant resources especially for the supply of food, fuel, fibre and medicine.

It is known fact that the plants are important entities in nature. They play vital role in balancing environment and animals including human beings. The plants are utilized in different fields such as human diet, agriculture and Ayurveda. Ayurveda is 4000 years old and still prevalent (Patwardhan and Hooper, 1991). From the literature it is also clear that the plants contain numerous chemical properties of bioactive principles. The bioactive principles of plants are used for the control of diseases of animals and plants including diseases of human beings(Sharville, 1960).

It is evident from the literature that in Nanded district of the Maharashtra State, many plant species are very common, dominant and produce a huge waste biomass. Nanded district comprises sixteen revenue talukas and forms the part of the Deccan Plateau of India. Nanded district is situated at about 365m above the mean sea level. Godawari is the main river flowing from west-east to east and south-east collecting water on its way from several large and small tributaries. It enters Andhra Pradesh and ultimately merges in to the Bay of Bengal. Major part of the Nanded region is characterized by deep black soil, hot summer and general dryness throughout the year except during the monsoon season. The average day temperature ranges from 27.2 ^{o}C to 38 ^{o}C while it falls from 26 to 20 ^{0}C during night. The highest during summer day being about 42.9 ^{o}C while the lowest during winter nights being about 10 ^{o}C .The relative humidity for major part of the year is between 35 to 50%. The average rainfall is about 900 to 910 mm / year.

According to Naik, 1998 the modern era is very particular about health hazards caused by the use of allopathic medicines. The herbal medicines are cheaper, safe and easily available. About 80% population in this region still depends on the traditional medicines for their primary health care needs. The Ayurveda, Unani and Siddha are emerging and they are in great demand. He has surveyed about 1,645 plant species from the

Marathwada region and he has reported that only about 350 plant species are used as medicinal plants. According to him the Nanded region is blessed with wide variety of soil and agro climatic conditions supporting a large variety of plants and these have larger demand in the global market. The vegetation of this region is divided into tropical dry deciduous scrub jungles and vast tract of dry grasslands on the basis of climate. The forests are confined to the Kinwat, Bhokar and Hadgaon talukas of the district. It is also clear from the literature that several workers have studied extensively quantitative and qualitative nature of the land and aquatic flora. In ancient Indian literature it was observed that every plant on this planet is useful in industry and medicines. Plant diversity on the walls would be a great source of medicines. It is observed fact that the wall flora produces a huge biomass. This fact promoted to work on the present research topic. Considering these facts the present topic entitled Studies on Delapidated flora of Nanded district with special reference to Mukhed taluka is selected for the proposed research work.

The study of diversity of wall flora, its documentation and digitalization feels to be a most urgent need of this region. However study of diversity of wall flora, its documentation and digitalization is meagre. Considering these facts the present topic is selected for the proposed research work.

The present research work would be divided into three parts. The first part of the research work would be devoted for the survey, identification, collection and description of the wall flora in the study region. This part would also be devoted for the collection of plant biomass in the form of roots, stems and leaves for further studies. For this part, several excursions in each and every season to different localities would be arranged. The collected plant species would be given temporary field numbers. The observations regarding the habitat, habit, root, stem, leaves, inflorescence, flowers, fruits, seeds, etc. would be noted. Attempts would be made in every case to identify the plants from fresh materials with the help of identification keys, floras, local herbarium, photographs and other available literature.

Floristic analysis of the identified plants would be made as per the Red Data categories used by the World Conservation Monitoring Centre (WCMC), Species Survival Commission (SSC) of International Union for Conservation of Nature (IUCN), 2006. They would be studied and the enumerated with photo plates.

REVIEW OF LITERATURE:

Rathor *et. al.* (2004) worked on poisonous plants of Nanded District of Maharashtra state. They studied ten different texa belonging to ten families. According to them they are used in traditional medicines which are toxic if they are not used in proper dose. Dhole *et. al.* (2009) studied some weeds of ethno medicinal importance. They have collected twenty plant species of eighteen genera of twelve families. They have presented this information under different heads such as botanical name, common name, family and uses. In uses they have mentioned which plant parts are important to cure certain disease. Biradar and Ghorband (2010) made survey of ethno medicinal plants of the Kinwat forest. They have studied twenty five plants belonging to 18 families and their medicinally important parts. Gawate and Papdiwal (2011) have surveyed the trees of Nanded District for bacterial dieses. They have studied the nine plants belonging to eight families. Ghorband and Biradar (2011) documented thirty two traditional medicinal plants. They found that about thirty eight diseases can be cured by these plants. They have given the important parts and the procedure to make medicines. Kanthale and Biradar (2012) carried out ethno botanical survey of the plants of Mahur range forest of Nanded District. They recorded twenty five plants of different fifteen families. They also studied how the tribals of Mahur depend on flora of these plants for their health. They have proposed the protocols of doses of medicines with their quantity. Ghorband and Biradar (2012) surveyed the folk medicines used by the tribes of Kinwet forest of Nanded District. They collected twenty five plants of twenty one families which are used to cure twenty five different diseases like jaundice and leucorrhoea. Gitte *et.al.*(2012)

documented ethno medicinal study of barks of some medicinal plant like Adansonia digitata L., Albizia lebbeck (L.) Willd.,and Butea monosperma (Lamk.). They found that some of plants have important contents in there bark. They studied twenty one plants belonging to sixteen families. Routh and Mangulkar (2013) have collected thirty two plants of twenty families. They studied these plants systematically with their botanical name, family, aliment and method of administration. According to them these plants are useful to cure various diseases like stomach ache and drying skin. Shaikh*et. al.* (2014) studied folk medicinal plants used by the villagers in the Nanded District. They have collected about seventy four plants of seventy genera belonging to forty two families. They have documented the information in the form of tables. Shinde (2015) studied some ethno-medico-botanical tuberous plants of Kinwat forest traditionally used by local tribes to cure the various human disease. He collected nine plants belonging to eight families. Reddy *et.al.* (2016) worked on the loss of medicinal plant diversity in Mahur and Kinwet Forest range of Nanded District. A continuous survey and observation of medicinal plants was carried out since 2001 to 2015. They have studied twelve endangered medicinal species of twelve families.

OBJECTIVES OF RESEARCH:

- To make survey of villages in Mukhed taluka of the Nanded district to study of wall flora
- To study floristic wealth of plant diversity on walls
- To collect the plants growing on the walls in the study region
- To preserve the wall plants by preparing herbarium
- To identify the collected plants using different floras, keys.
- To update the nomenclature as per the ICN.
- To represent the plants in digital form.

PROPOSED HYPOTHESIS:

The present studies would account the diversity of the wall plants. The studies would give information of distribution, taxonomical, ecological features, local names and citation of specimen along with a short description of the wall plants. The plant diversity of Nanded district is quite varied and interesting. The plants seen in this area are also rich in economically important species. The present study will lead to better understanding of the wall flora of this area. The data would be contributed to the flora of the Nanded district, subsequently flora of Maharashtra, India.

METHODOLOGY TO BE ADOPTED:

- Literature survey will be done to gather the data on the wall vegetation of the study region. The data will also be collected by referring different libraries herbarium and internet.
- Frequent visits (seasonal) will be made to survey the wall plants of the study region for the Herbarium and digitalization.
- Based on the survey work, the data obtained will be analyzed and interpreted.
- A list of all the wall plants will be prepared and conclusion will be drawn.

Survey Method

The survey of wall plants would be made by frequent seasonal visits. The survey refers to the method of securing information concerning phenomena under study from all or a selected number of respondents of the concerned universe. In a survey, the investigator examines those phenomena which exist in exist in the universe independent of his action. (Kothari, 2004) .A survey is simply a data collection tool for carrying out survey research Pinsonneault and Kraemer (1993). Plant surveys at regular interval of time and at specific seasons are useful for collecting data. Digitalization, by contrast, refers to the adoption or increase in use of digital or computer technology by an organization, industry, country (Narula and Rana, 2017). Taxonomically important set of digital photographs of wall plants in their natural habitat can be supplemented with the taxonomical description and

other information related to the species. This digitized information of the plants would be useful for the researcher (Wankhede and Mulani, 2015). A database of the wall plants will be made public through website. A detail survey of all the area comprising in Mukhed taluka of Nanded district for mapping of wall plants in vegetative and flowering state will be made. This survey will be planned on the basis of regular time intervals and specific flowering stages of the plants.

IMPORTANCE OF THE STUDY:

International status:

At the international level, herbaria, botanical gardens and the floras of different countries have been made by the different workers for example the flora of India and China. Floras of different continents also have been made and the plant specimens are preserved in the herbarium and conserved in botanical gardens. A herbarium is a place where plant material is preserved using various techniques and arranged in the sequence of an accepted classification. World's largest herbarium is at Royal Botanic Gardens, Kew, England.

National status:

At the national level, the Botanical Survey of India (BSI) is an institution set up by the Government of India in 1890 to survey the plant resources of the Indian empire. The floras of different states of India and different districts of different states and villages have been made by different workers. There are many botanical gardens with good collection of plant species.

Significance of the study:

Plants have been used for medicinal purposes long before prehistoric period. Ancient Unani manuscripts Egyptian papyrus and Chinese writings described the use of herbs. Evidence exists that the Unani Hakims, Indian Vaidus and European and Mediterranean cultures were using herbs for over 4000 years as medicine. Indigenous cultures such as Rome, Egypt,

Iran, Africa and America used herbs in their healing rituals, while other developed traditional medical systems such as Unani, Ayurveda and Chinese Medicine in which herbal therapies.

PROPOSED WORK PLAN:

First Year:

The first part would be devoted for course work and collection of wall flora of Mukhed taluka of the Nanded district during rainy, winter and summer seasons. It would be also devoted for identification, nomenclature, classification, documentation and digitalization of the medicinal plants.

Second Year:

The second part of the work would be devoted for collection of wall flora of the study region during rainy, winter and summer seasons. It would be also devoted for identification, nomenclature, classification, documentation and digitalization of the medicinal plants.

Third Year:

The third part of the research work would be devoted for the survey and collection of wall flora of the study region during rainy, winter and summer seasons. It would be also devoted for identification, nomenclature, classification, documentation and digitalization of the medicinal plants. This part would also be devoted for data compilation, analysis and thesis writing.

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